REMARKS

In the Office Action, the Examiner rejected claims 27-47 under 35 U.S.C. §102(e) as being anticipated by United States Patent 6,682,6737, issued to Teig ("Teig"). Applicants have not amended, added or canceled any claim. Therefore, claims 27-47 remain pending in this application.

I.   Rejection to Claims 27-36 under 35 U.S.C §102(e)

In the Office Action, the Examiner rejected claims 27-36 under 35 U.S.C. §102(e) as being anticipated by Teig. Claims 28-36 are dependent directly or indirectly on independent claim 27. Claim 27 recites a method of pre-computing routes for nets. Prior to performing a routing operation, the method defines a set of partitioning lines for partitioning, during the routing operation, a region of an integrated circuit ("IC") layout into several sub-regions. For a set of potential sub-regions, the method identifies a set of at least two routes that traverse the potential set of sub-regions, where at least one of the routes has at least one diagonal edge. The method stores the identified routes, where the stored routes are for use during the routing operation.

Applicants respectfully submit that Teig does not disclose, teach, or even suggest such a method. Teig describes placement operations that place circuit in an IC layout. *See e.g., Teig, Abstract.* Accordingly, Teig does not disclose identifying routes that traverse a set of regions, and storing the identified routes for using during a routing operation. *See e.g., Teig, column 5, lines 24-41.* In other words, Teig does not describe a method that stores routes for use during the routing operation, as recited in claim 27. Teig only describes storing attributes of routes and then using such attributes during placement operations. *See, e.g., Teig, Column 5, lines 33-55; see e.g., Column 6, lines 5-10.*

Accordingly, Applicants respectfully submit that Teig does not render claim 27 unpatentable. As claims 28-36 are dependent on claim 27, Applicants respectfully submit that claims 28-36 are patentable over Teig for at least the same reasons that were discussed above for claim 27.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(e) rejection of claims 27-36.

II.   Rejection to Claims 37-41 under 35 U.S.C §102(e)

In the Office Action, the Examiner rejected claims 37-41 under 35 U.S.C. §102(e) as being anticipated by Teig. Claims 38-41 are dependent directly or indirectly on independent claim 37. Claim 37 recites a method for a router, of pre-computing routes for connecting sub-regions. The router uses a set of partitioning lines to partition an integrated-circuit ("IC") layout region into several sub-regions, where several routing paths exist between the sub-regions. For each particular combination of two or more sub-regions, the method identifies at least one route for connecting the particular combination of the sub-regions, where identifying is performed before a routing operation. The method identifies the routing paths used by each identified route, where some of the identified routing paths are diagonal. The method stores the identified routing paths for each identified route in a storage structure, where the stored routing paths are for use during the routing operation.

Applicants respectfully submit that Teig does not disclose, teach, or even suggest such a method. Teig describes placement operations that place circuit in an IC layout. *See e.g., Teig, Abstract*. Accordingly, Teig does not disclose identifying routes that traverse a set of regions, and storing the identified routes for using during a routing operation. *See e.g., Teig, column 5, lines 24-41*. In other words, Teig does not describe a method that stores routing paths for use during the routing operation, as recited in claim 37. Teig only describes storing attributes of

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routes and then using such attributes during placement operations. *See, e.g., Teig, Column 5, lines 33-55; see e.g., Column 6, lines 5-10.*

Accordingly, Applicants respectfully submit that Teig does not render claim 37 unpatentable. As claims 38-41 are dependent on claim 37, Applicants respectfully submit that claims 38-41 are patentable over Teig for at least the same reasons that were discussed above for claim 37.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(e) rejection of claims 37-41.

III. Rejection to Claims 42-45 under 35 U.S.C §102(e)

In the Office Action, the Examiner rejected claims 42-45 under 35 U.S.C. §102(e) as being anticipated by Teig. Claims 43-45 are dependent directly or indirectly on independent claim 42. Claim 42 recites a method for a router, of pre-computing routes for connecting sub-regions. The router uses a set of partitioning lines to partition an integrated-circuit ("IC") layout region into several sub-regions, where several edges exist between the sub-regions. For each particular combination of at least two of the sub-regions, the method identifies at least one routing graph for connecting the particular combination of the sub-regions, where the identifying is performed before a routing operation. For each particular combination of at least two of the sub-regions, the method identifies the edges intersected by each routing graph identified for the particular combination of the sub-regions, where some of the identified edges are diagonal. The method stores the identified edges for each routing graph identified for the particular combination of the sub-regions in a storage structure, where the stored edges are for use during the routing operation.

Applicants respectfully submit that Teig does not disclose, teach, or even suggest such a method. Teig describes <u>placement operations</u> that place circuit in an IC layout. *See e.g., Teig,*

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Abstract. Accordingly, Teig does not disclose identifying routes that traverse a set of regions, and storing the identified routes for using during a routing operation. *See e.g., Teig, column 5, lines 24-41.* In other words, Teig does not describe a method that <u>stores edges</u> <u>for use during the</u> <u>routing operation</u>, as recited in claim 42. Teig only describes storing attributes of routes and then using such attributes during placement operations. *See, e.g., Teig, Column 5, lines 33-55; see e.g., Column 6, lines 5-10.*

Accordingly, Applicants respectfully submit that Teig does not render claim 42 unpatentable. As claims 42-45 are dependent on claim 42, Applicants respectfully submit that claims 42-45 are patentable over Teig for at least the same reasons that were discussed above for claim 42

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(e) rejection of claims 42-45.

IV.   Rejection to Claim 46 under 35 U.S.C §102(e)

In the Office Action, the Examiner rejected claim 46 under 35 U.S.C. §102(e) as being anticipated by Teig. Claim 46 recites a method of pre-computing routes. Prior to performing a routing operation, the method defines a set of partitioning lines for partitioning, during the routing operation, a region of an integrated circuit ("IC") layout into several sub-regions, where several ± 45° diagonal edges and several Manhattan edges exist between sub-regions. For a set of potential sub-regions, the method identifies a set of at least two routes that traverse the potential set of sub-regions, where at least one of the routes utilizes at least one diagonal edge and one Manhattan edge. The method stores the identified routes, where the stored routes are for use during the routing operation.

Applicants respectfully submit that Teig does not disclose, teach, or even suggest such a method. Teig describes <u>placement operations</u> that place circuit in an IC layout. *See e.g., Teig,*

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Abstract. Accordingly, Teig does not disclose identifying routes that traverse a set of regions, and storing the identified routes for using during a routing operation. *See e.g., Teig, column 5, lines 24-41.* In other words, Teig does not describe a method that <u>stores routes</u> <u>for use during the</u> <u>routing operation</u>, as recited in claim 46. Teig only describes storing attributes of routes and then using such attributes during placement operations. *See, e.g., Teig, Column 5, lines 33-55; see e.g., Column 6, lines 5-10.*

Accordingly, Applicants respectfully submit that Teig does not render claim 46 unpatentable. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(e) rejection of claims 46.

V.   Rejection to Claim 47 under 35 U.S.C §102(e)

In the Office Action, the Examiner rejected claim 46 under 35 U.S.C. §102(e) as being anticipated by Teig. Claim 47 recites a method of pre-computing routes. The method defines a set of partitioning lines for partitioning, during the routing operation, a region of an integrated circuit ("IC") layout into several sub-regions, the defining performed before the routing operation, where several ± 45° diagonal paths and several Manhattan paths exist between the sub-regions. For a set of potential sub-regions, the method identifies a set of at least two routes that traverse the potential set of sub-regions, where at least one of the routes utlitizes at least one diagonal path and one Manhattan path. The method stores the identified routes, where the stored routes are for use during the routing operation.

Applicants respectfully submit that Teig does not disclose, teach, or even suggest such a method. Teig describes <u>placement operations</u> that place circuit in an IC layout. *See e.g., Teig, Abstract.* Accordingly, Teig does not disclose identifying routes that traverse a set of regions, and storing the identified routes for using during a routing operation. *See e.g., Teig, column 5, lines 24-41.* In other words, Teig does not describe a method that <u>stores routes</u> <u>for use during the</u>

<u>routing operation</u>, as recited in claim 47. Teig only describes storing attributes of routes and then using such attributes during placement operations. *See, e.g., Teig, Column 5, lines 33-55; see e.g., Column 6, lines 5-10.*

Accordingly, Applicants respectfully submit that Teig does not render claim 47 unpatentable. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(e) rejection of claims 47.

CONCLUSION

In view of the foregoing, it is submitted that all the claims, namely claims 27-47, are in condition for allowance. Reconsideration of the rejections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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